

REMARKS

Claims 1-25 were pending in the above-identified application when last examined and are amended as indicated above.

Claims 1, 3, 6, 9-11, 17, 18, 21-23, and 25 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Pat. No. 6,484,137 (Taniguchi). Applicant respectfully traverses the rejection.

Independent claim 1 distinguishes over Taniguchi at least by reciting, "preprocessing audio data to determine parameters associated with time scaling of the audio data ... wherein using the parameters in the time scaling requires less processing power than would time scaling of the audio data without using the parameters." Taniguchi fails to disclose preprocessing of audio data to determine parameters that reduce the processing power required for time scaling.

Taniguchi discloses audio time scaling systems using expanding/compressing means (e.g., means 103 or 3002) that implement simple fixed-value compression or expansion. See for example, Figs. 3(a) to 3(c) of Taniguchi. In order to achieve, time scale factors that differ from the fixed value, Taniguchi uses a control means (e.g., means 107 or 3006) to control the percentage of audio frames that are compressed or expanded, thereby controlling the average time scaling factor. Taniguchi also discloses using including a frame sequence table 108 for selecting which frames to compress/expand to minimize audio distortion.

Taniguchi fails to suggest preprocessing audio to determine parameters that reduce the required processing power for time scaling. Instead, Taniguchi uses parameters that are either independent of the audio being time scaled or that improve the quality of the time scaling without changing the required processing power. In particular, frame sequence table 108 is a fixed table that defines the percentage of frames that must be compressed/expanded using fixed value scaling to achieve a desired time scale factor. Taniguchi fails to suggest preprocessing audio to determine frame sequence table 108 because frame sequence table 108 is independent of audio being time scaled. Means 106, 3004, 4004, etc. in Taniguchi process audio frames for selection processes that reduce distortion, e.g., to identify frames for which time scaling causes minimal distortion, but Taniguchi fails to suggest that such processing reduces the processing power required for time scaling because the number of frames that must be compressed/expanded is mandated by the desired average time scale factor.

In accordance with an aspect of Applicant's invention, preprocessing of audio data can provide parameters such as offsets that enable a low processing power device to perform time scaling in real time. In contrast, Taniguchi takes the approach of using simple fixed value time scaling to achieve other time scale factors, and Taniguchi must use further processing to address distortion issues. Taniguchi fails to suggest preprocessing audio data to determine parameters that reduce require processing power. Accordingly, claim 1 is patentable over Taniguchi.

Claims 3, 6, and 9-11 depend from claim 1 and are patentable over Taniguchi for at least the same reasons that claim 1 is patentable over Taniguchi.

Independent claim 17 distinguishes over Taniguchi at least by reciting, "preprocessing audio data to determine one or more parameters indicating a relation between time scales and offsets of a frame of the audio data relative to preceding audio data during a time scaling process." Taniguchi fails to disclose or suggest preprocessing audio data to determine one offset or multiple offsets associated with a frame. As noted above, the frame sequence tables of Taniguchi are the same for all audio data and not the result of preprocessing audio data. Accordingly, claim 17 is patentable over Taniguchi.

Claim 18 depends from claim 17 and is patentable over Taniguchi for at least the same reasons that claim 17 is patentable over Taniguchi.

Independent claim 21 distinguishes over Taniguchi by reciting, "An audio data structure, comprising: a plurality of frames respectively corresponding to sections of audio, each frame comprising a plurality of samples of the corresponding section of audio; and one or more parameters for each frame, the parameters providing information that is derived from the samples and that reduces an amount of processing power needed for time scaling the audio data." As noted above, Taniguchi fails to disclose parameters that are derived from the audio samples and reduce the amount of processing power required for time scaling. Instead, Taniguchi uses predefined frame sequence tables that are independent of the content of the audio signal being time scaled. Accordingly, claim 21 is patentable over Taniguchi.

Claims 22, 23, and 25 depend from claim 21 and are patentable over Taniguchi for at least the same reasons that claim 21 is patentable over Taniguchi.

For the above reasons, Applicant requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 102.

Claims 4, 14, 15, and 19 were rejected under 35 U.S.C. § 103(a) as unpatentable over Taniguchi. Applicant respectfully traverses the rejection.

Claims 4, 14, and 15 depend from claim 1 and are patentable over Taniguchi for at least the reasons given above to show claim 1 is patentable over Taniguchi.

Claim 4 further distinguishes over Taniguchi by reciting, "the storage media is a disk" where claim 3, from which claim 4 depends, recites, "recording the audio data and the parameters on a storage media." The Examiner identified the control signal from means 107, which derives from frame sequence table 108, as corresponding to the recited parameters. However, Taniguchi fails to provide any suggestion of storing audio data and the control signal or frame sequence table 108 on a disk. More specifically, table 108 is the same for all data, and Taniguchi therefore includes frame sequence table 108 as part of the audio decoding system, while the audio data is from a separate source.

Claim 14 further distinguishes over Taniguchi by reciting, "a server performs the preprocessing of the audio data to determine the parameters associated with time scaling of the audio data." As noted above, Taniguchi fails to suggest preprocessing audio data to derive parameters that reduce required processing power for time scaling.

Claim 19 depends from claim 17 and is patentable over Taniguchi for at least the reasons given above to show claim 17 is patentable over Taniguchi.

Claim 19 further distinguishes over Taniguchi by reciting, "interpolating between the preprocessed offsets to determine the offset corresponding to the selected time scale." Taniguchi fails to suggest interpolation between offsets or how interpolation might be otherwise used. In particular, Taniguchi uses control signals with values having a discrete meaning, for example, expand frame, compress frame, or leave frame unchanged. There is no suggestion of how these discrete values might be interpolated.

For the above reasons, Applicant requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

Claims 2, 5, 7, 8, 12, 13, 16, and 24 were rejected under 35 U.S.C. § 103(a) as unpatentable over Taniguchi in view of U.S. patent No. 5,920,840 (Satyamurti). Applicant respectfully traverses the rejection.

Claims 2, 5, 7, 8, 12, 13, and 16 depend from independent claim 1, and claim 24 depends from independent claim 21. The Examiner cites Satyamurti for disclosing time scaling in real time, transmitting audio data to voice expansion circuitry over a network,

computing a segment size dynamically, and a time scaling voicemail system. However, such teachings do not change the above reasoning showing independent claims 1 and 21 are patentable. Accordingly, claim 1 and 17 are patentable over the combination of Taniguchi and Satyamurti, and claims 2, 5, 7, 8, 12, 13, 16, and 24 are patentable over the combination of Taniguchi and Satyamurti, for at least the same reasons that their respective base claims are patentable over the combination.

For the above reasons, Applicant requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

Claim 20 was rejected under 35 U.S.C. § 103(a) as unpatentable over Taniguchi in view of U.S. patent No. 5,828,994 (Covell). Applicant respectfully traverses the rejection.

Claim 20 depends from independent claim 17, which is patentable over Taniguchi for at least the reasons set forth above. Covell discloses a time scaling system that calculates parameter referred to as audio stress or audio tension and uses this audio parameter in a non-uniform time scaling process that attempts to improve intelligibility of the time scaled audio. However, Covell alone or in combination with Taniguchi fails to suggest "preprocessing audio data to determine one or more parameters indicating a relation between time scales and offsets of a frame of the audio data relative to preceding audio data during a time scaling process" as recited in claim 17. Accordingly, claim 20 is patentable over the combination of Taniguchi and Covell, and Applicant requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

In summary, claims 1-25 were pending in the application. This response amends claims 17 and 21. For the above reasons, Applicant respectfully requests allowance of the application including claims 1-25.

Please contact the undersigned attorney at (408) 927-6700 if there are any questions concerning the application or this document.

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